



REVIEW ARTICLE

Epidemiological study of human intestinal parasites in Sarawak, East Malaysia: A review

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ABSTRACT

Intestinal parasitic infections are endemic in rural settings and may account for asymptomatic infections to various health complications. These infections are a cause of concern for communities of lower economic status, especially in developing countries. In Sarawak, indigenous populations residing in geographically inaccessible areas are socially and economically disadvantaged. Through close association with nature, these populations are prone to intestinal parasitism. Currently, scattered information has led to a continual state of neglect at each level of parasitic infection control. This urges for a review of their distribution and transmission based on previous reports to understand the pattern of the diseases in the state which can further address the improvement of mass controlling programs. A literature search was conducted to collect previous reports on human intestinal parasites in Sarawak, East Malaysia from PubMed (Medline), SCOPUS, ScienceDirect and Web of Science from January 2019 to March 2021. Extrapolating the current data in Sarawak which is still considered limited, further interdisciplinary strategies are demanded to give insights in the epidemiology and true prevalence of intestinal parasites in Sarawak. This review addresses for redirection of attitude towards intestinal parasitic infections where it should be given with ample attention by rural populations. In tandem to that, improvement of rural livelihood such as standard of living and sanitation in Sarawak should be accredited as part of the efforts to reduce the number of intestinal parasitic infections in the state. As a control measure, mass deworming should be reconsidered especially to the rural populations.

Keywords: Intestinal parasites; nematode; protozoa; indigenous populations; Sarawak.

INTRODUCTION

Sarawak is the largest state in Malaysia which is nearly as large as the Peninsular Malaysia. It is situated in the northwest Borneo region and has a complex ethnic and cultural backgrounds (i.e. races and indigenous groups) that comprise approximately 2.656 million population in 2020 (DOSM, 2021). Iban is the largest proportion of this diversity, in addition to the composition of other races which include Malay, Chinese, India and indigenous populations comprising Baketan, Betawan, Bisaya, Kayan, Kedayan, Kejaman, Kelabit, Kenyah, Lahanan, Lisum, Longkiput, Lun Bawang, Melanau, Penan, Sekapan, Sihan, Tagal, Tabun and Ukit (Ting & Ling, 2013). Each of these ethnic groups has different language, culture and lifestyles. The socio-demographic backgrounds for these communities usually involve living in longhouses, practising self-subsistence (e.g. cultivation, animal husbandry and fishing) and located remote to urban and semi-urban areas. However, for the

Penan tribes, they were used to be unsettled, hunter-gatherers and dependable on food from deep jungles (e.g. wild sago, wild plants and wild animals). Penan tribes were also regarded as the most marginalised and disadvantaged due to their nomadic lifestyle before transitioning to being partial or fully settled (Sercombe, 2020).

Sarawak has 93 water treatment plants that produced 1,328 million litres per day (MLD) of water production (National Water Services Commission, 2018a) and 474 MLD of domestic consumption in 2016 (National Water Services Commission, 2018b). Provision of drinking water in Sarawak, in terms of area of supply and distribution, can be divided into two clusters which are urban and rural water supplies. Urban areas in Sarawak are provided by the state-governed water bodies which are Kuching Water Board (KWB) in Kuching, Sibu Water Board in Sibu and Northern Region Water Board (LAKU) in Northern Regions of Sarawak, whilst, most rural regions are reliant on the water supplied by Sarawak Rural Water Supply Department (JBALB). As there are limited